PROCESSES FOR FABRICATING PRINTED WIRING BOARDS USING DENDRITIC POLYMER COPPER NANOCOMPOSITE COATINGS

ABSTRACT OF THE DISCLOSURE

An inexpensive process for depositing an electrically conductive material on selected surfaces of a dielectric substrate may be advantageously employed in the manufacture of printed wiring boards having high quality, high density, fine-line circuitry, thereby allowing miniaturization of electronic components and/or increased interconnect capacity. The process may also be used for providing conductive pathways between opposite sides of a dielectric substrate and in decorative metallization applications. The process includes steps of depositing a radially-layered dendritic copolymer on selected surfaces of a dielectric substrate; cross-linking the radially-layered dendritic copolymer to form a dendritic polymer network; sorbing metal cations into the cross-linked dendritic polymer network; reducing the metal cations to form a nanocomposite composition exhibiting adequate surface electrical conductivity for electroplating; and electroplating a metal onto the nanocomposite composition to form an electrically conductive deposit.